

The invention is claimed as follows:

1. A cage member engageable with a nut member having an aperture, thereby providing a cage nut assembly, said cage member comprising:

5 a body configured to encage the nut member and having an aperture formed therein, said aperture configured to allow access to the aperture of the nut member when the nut member is generally encaged by said cage member, said body defining a base portion, said body being configured to engage the nut member such that the nut member is suspended off of said base portion.

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2. A cage member as defined in claim 1, wherein said body further comprises at least one arm portion which extends from said base portion and serves to suspend the nut member off of the base portion.

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3. A cage member as defined in claim 2, wherein said at least one arm portion comprises two arm portions which are positioned opposite of one another.

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4. A cage member as defined in claim 3, wherein said base portion is rectangular such that said base portion has four corners, one of said arm portions extending from one of said corners of said base portion and said other one of said arm portions extending from another one of said corners of said base portion.

5. A cage member as defined in claim 3, wherein said opposite facing arm portions define an opening therebetween, said opening sized to receive a portion of the nut member therethrough when the nut member is suspended above said base portion of said cage member by said two arm portions.

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6. A cage member as defined in claim 5, wherein each said arm portion has a generally C-shaped portion, said C-shaped portions being positioned opposite one another and defining said opening.

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7. A cage member as defined in claim 2, wherein said at least one arm portion is formed of a flexible material.

8. A cage member as defined in claim 2, wherein said at least one arm portion can be moved to allow the nut member to be positioned above said base portion of said body.

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9. A cage member as defined in claim 1, wherein said body is further configured to provide a limited range of movement of the nut member in at least one dimension, said body configured to allow access to the aperture of the nut member within the limited range of movement of the nut member provided by said body.

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10. An assembly configured to receive a fastener, said assembly comprising:

a nut member having a first plate, a second plate and a cylindrical member which connects said first plate to said second plate, each said plate having an upper surface and a lower surface, said cylindrical member extending between said upper surface of said first plate and said lower surface of said second plate, said nut member further having an aperture which extends through said first plate, said cylindrical member and said second plate; and

a cage member configured to encage the nut member and having an aperture formed therein, said aperture configured to allow access to said aperture of said nut member when said nut member is generally encaged by said cage member, said cage member defining a base portion, said cage member being configured to engage the nut member such that said nut member is suspended off of said base portion.

11. An assembly as defined in claim 10, wherein said cage member comprises at least one arm portion which extends from said base portion and serves to suspend said nut member off of said base portion.

12. An assembly as defined in claim 11, wherein said at least one arm portion comprises two arm portions which are positioned opposite of one another.

13. An assembly as defined in claim 12 wherein said base portion is rectangular such that said base portion has four corners, one of said arm portions extending from one of said corners of said base portion and said other one of said arm portions extending from another one of said corners of said base portion.

14. An assembly as defined in claim 12, wherein said opposite facing arm portions define an opening therebetween, said opening sized to receive said cylindrical member of said nut member therethrough when said nut member is suspended above said base portion of said cage member by said two arm portions.

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15. An assembly as defined in claim 14, wherein each said arm portion has a generally C-shaped portion, said C-shaped portions being positioned opposite one another and defining said opening.

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16. An assembly as defined in claim 14, wherein said two arm portions have top surfaces, said second plate of said nut member being positioned on said two arm portions in order to suspend said first plate of said nut member above said base portion of said cage member, said lower surface of said second plate being positioned against said upper surfaces of said two arm portions.

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17. An assembly as defined in claim 16, wherein said lower surface of said second plate has protrusions extending therefrom, said protrusions being positioned against said upper surfaces of said two arm portions.

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18. An assembly as defined in claim 16, wherein said base portion of said cage member has a generally planar upper surface, said upper surfaces of said two arm portions being parallel to said upper surface of said base portion of said cage member.

19. An assembly as defined in claim 11, wherein said at least one arm portion is formed of a flexible material.

20. An assembly as defined in claim 11, wherein said at least one arm portion can be moved to allow said nut member to be positioned above said base portion of said cage member.

21. An assembly as defined in claim 10, wherein said cage member is further configured to provide a limited range of movement of said nut member in at least one dimension, said cage member configured to allow access to said aperture of said nut member within the limited range of movement of said nut member provided by said cage member.

22. A combination comprising:

a workpiece having first and second surfaces and an aperture provided therethrough;

a nut member having a first plate, a second plate and a cylindrical member which connects said first plate to said second plate, each said plate having an upper surface and a lower surface, said cylindrical member extending between said upper surface of said first plate and said lower surface of said second plate, said nut member further having an aperture which extends through said first plate, said nut member having a threaded wall which defines at least a portion of said aperture of said nut member, said cylindrical member and said second plate;

a cage member which is associated with said first surface of said workpiece, said cage member configured to encage said nut member and having an aperture formed therein which is aligned with said aperture of said workpiece and with said aperture of said nut member, said cage member defining a base portion, said cage member being configured to engage said nut member such that said nut member is suspended off of said base portion; and

a fastener having an enlarged head portion and an elongated shank extending therefrom, said enlarged head portion being associated with said second surface of said workpiece, said elongated shank extending through said aperture of said workpiece, through said aperture of said cage member, and being in threaded engagement with said threaded wall of said nut member.

23. A combination as defined in claim 22, wherein said cage member is welded to said first surface of said workpiece.

24. A combination as defined in claim 22, wherein said lower surface of said first plate of said nut member interfaces said base portion of said cage member in order to provide a solid joint between said nut member, said cage member, said workpiece, and said fastener.

5 25. A combination as defined in claim 22, wherein said at least one arm portion is formed of a flexible material.

26. A combination as defined in claim 22, wherein said cage member comprises at least one arm portion which extends from said base portion, said at least one arm portion having an upper surface which is in contact with said lower surface of said second plate of said nut member

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